



Town of Truro New Public Works Facility

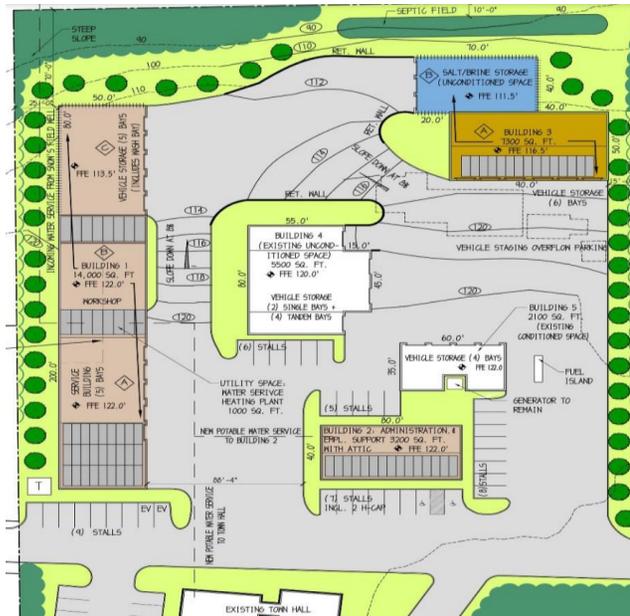


Update
October 10, 2023

Town of Truro New Public Works Facility

Summary of High-Level Review of the DPW Campus Design Prepared by the Residents DPW Study Group

DPW Campus at Town Hall Site
(Prepared by Resident DPW Study Group)



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Summary of Observations

- Use of existing old buildings is a short-term solution due to age and condition of existing structures
 - Existing DPW buildings on site are 50 – 90+ years old
 - Change in use will likely require code upgrades (sprinkler, egress, life safety, etc.)
- Any renovations will likely trigger more significant code required upgrades based on International Existing Building Code (IEBC)
 - ADA
 - Seismic
 - Life safety
- Electrical distribution and generator capacity issues with 6 different secondary feeds (expensive)
- Locating DPW Operations in 6 buildings – inefficient for operations

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Summary of Observations

- Undocumented fill located behind existing DPW – anticipate rammed aggregate piers or removal and replacement with structural fill to meet building code
- Maintenance bays are not deep enough
- Maintenance Bay height is not adequate
- Shops need overhead door access
- Campus plan as shown does not appear to show the building correctly (buildings are shown too small)
- Circulation and grading at salt shed is unsafe creating operational and safety challenges

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Summary of Cost Estimate Observations

DPW Resident Study Group Missing Costs from Original Estimate

- Site costs are low (\$1.1M vs \$2.3M): \$1.2M
- No industrial equipment included: \$1.0M
- No salt shed costs included: \$0.8M
- Very low contingency (\$0.9 vs. \$2.2M): \$1.3M
- No escalation included (escalate to 2025): \$2.6M
- No costs for new energy code impacts: \$1.4M
- No Soft Costs included: \$7.0M

- A&E Fees
- Owner's Project Manager Fees
- Furnishings
- Communic./Low Voltage System
- Security System
- Printing / Advertising Costs
- Legal Costs
- Utility Back-charges
- Building Commissioning
- Moving Costs
- Code Required Testing & Inspections
- Owner/Construction Contingency

\$15.3M Total Missing Costs

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		<u>\$15.3M Total Missing Costs</u>
• Original Resident Study Group Estimate:	\$15.5M	}
• Missing Costs (see above):	<u>\$15.3M</u>	
• Revised Total with Missing Costs:	\$30.8M	←

Note – missing costs are based on comparison to W&S cost estimate

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**Comparison of Weston & Sampson Estimate
to Independent Peer Review Estimate**

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Peer Review Estimate

	<u>CHA</u>	
• CHA Average Construction Cost:	\$25.3 M	
• CHA estimate does not include:		
• Escalation to 2025:	\$2.1 M	
• Industrial Equipment:	\$1.0 M	
• Soft Costs:	\$7.0 M	
• A&E Fees		
• Owner's Project Manager Fees		
• Furnishings		
• Communic./Low Voltage System		
• Security System		
• Printing / Advertising Costs		
• Legal Costs		
• Utility Back-charges		
• Building Commissioning		
• Moving Costs		
• Code Required Testing & Inspections		
• Owner/Construction Contingency		
• CHA Total Project Costs with Additions:	\$35.4 M	} Estimates are within 2%
• Weston & Sampson Estimate:	\$34.6 M	

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Benefits of Storing Vehicles Indoors

Added Serviceable Years

Cost Savings

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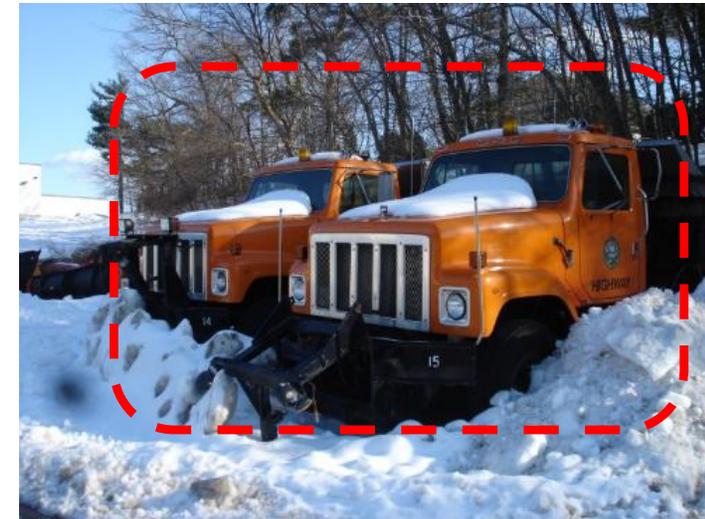
Why put the vehicles and equipment indoors.....

Case Study for increased vehicle life expectancy associated with storage of equipment indoors

- A Town purchased three large dump trucks
- Town only had room to store one indoors
- Remaining two vehicles were stored outdoors
- Two vehicles stored outdoors were removed from service early due to equipment deterioration. Equipment conditions were so poor that they were sold as scrap.
- The vehicles which was stored indoors **remained in service for three more years** and was in suitable condition when it reached its service life that it was able to be sold at auction



Only room to store one (1) new dump truck indoors



Two (2) vehicles stored outdoors due to limited availability of covered storage

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Why put the vehicles and equipment indoors.....

1. Employee Safety
2. Public Safety
3. Protection of Equipment
4. Stormwater Pollution Control
- 5. Cost Effective Operations**
6. Efficient Operations

Cost to Construct Storage Garage

- Construction
- Maintenance
- Operation

VERSUS

Cost Associated with Exterior Storage

- Increased Vehicle Maintenance
- Decrease in Vehicle Life Expectancy
- Non-Productive Labor
- Operational impacts
- Employee Safety & Environmental

Analyses has shown that it will cost 2 times more to store equipment outdoors over the life of a building

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Why put the vehicles and equipment indoors.....

Item	Description	Cost Over the Life of the Building (50 Years)
1	Construction Cost of a New 16,958 SF Storage Garage + 5,100 SF Canopy	\$ 6,377,748
2	Building Maintenance Costs	\$ 1,150,487
3	Heating, Ventilation, and Electrical Costs	\$ 2,211,304
	Total Costs Associated with Building and Maintaining a Storage Garage:	\$ 9,739,539
4	Additional Vehicle Maintenance Costs Associated with Exterior Storage	\$ 4,882,219
5	Additional Costs Associated with Vehicle Life Expectancy Reduction	\$ 6,060,113
6	Site Development Costs for Exterior Storage	\$ 702,181
7	Exterior Storage Area Maintenance Costs	\$ 1,352,147
8	Cold Weather Costs for Vehicles Stored Outdoors (non-productive labor)	\$ 2,376,297
9	Storm Event Costs for Vehicles Stored Outdoors (non-productive labor)	\$ 335,477
10	Engine Block Heater Usage Costs	\$ 578,792
11	Security Loading & Unloading of Vehicles (non-productive labor)	\$ 1,098,580
12	Vehicle Staging Non-Productive Labor Costs	\$ 77,324
13	Reduced Employee Safety Costs	\$ 198,266
14	Environmental Impacts	\$ 716,879
15	Increase in Vehicle Maintenance Costs Due to Delays in Preventative Maint.	\$ 744,139
	Costs Associated with Storing Vehicles Outdoors:	\$ 19,122,415
	Additional Costs Incurred By the Town if Vehicles and Equipment are Stored Outdoors:	\$ 9,382,876

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Estimated Costs for Feasibility Study

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Typical Feasibility Study Scope of Services

- Programming / Space Need Assessment
- Existing Conditions Assessment
- Site Selection Analysis
- Conceptual Plan Development
- Cost Estimate
- Final Report and Presentation
- **Estimated Fee: \$50,000 - \$80,000**

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Potential Cost of Inaction

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Cost of Inaction

- Temporary Repairs to continue to operate out of existing facilities

- Construction Escalation for new facility

- Vehicles & Equipment Long Term Costs
 - Decreased vehicle life expectancy
 - Increased vehicle maintenance costs

- Non-Tangible Items
 - Non-productive labor
 - Increased response times

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Cost of Inaction

Temporary Repairs

- Band-aiding 5-7 years
- Typically Ranges between \$63/sf - \$180/sf
- Results in anticipated costs \$352,00 - \$1,011,000

Cost Type	Typical Upgrades	
	Min	Max
Accessibility	\$ 1.61	\$ 1.61
Life Safety	\$ 9.49	\$ 30.57
Site Improvements	\$ 4.73	\$ 7.17
Building Utilities	\$ 3.66	\$ 3.66
Building Envelope	\$ 1.83	\$ 8.04
Building Interior	\$ 1.15	\$ 2.44
Building Systems	\$ 4.37	\$ 7.98
DPW Operations	\$ 10.56	\$ 42.56
Sub TOTAL	\$ 36.25	\$ 104.02
GC Overhead (20%)	\$ 7.25	\$ 20.80
SUBTOTAL CONSTRUCTION COSTS	\$ 43.50	\$ 124.82
Escalation (to 2023)	\$ 4.79	\$ 13.73
Escalation (to 2024)	\$ 2.90	\$ 8.31
Owner's Soft Costs (26%)	\$ 3.58	\$ 10.28
Design & Estimating Contingency (30%)	\$ 3.83	\$ 11.00
Small Project Adjustment (15%)	\$ 4.10	\$ 11.77
Subtotal Potential Project Cost (\$/sf)	\$ 62.71	\$ 179.92
Existing Building (sf)	5,620	5,620
TOTAL Potential Project Cost (rounded)	\$ 352,000	\$ 1,011,000

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Potential Cost of Inaction

- Assuming one year of construction escalation @ 5%
 - Escalation to push 1 year (mid point construction 2026): \$1,680,000

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Thank You